

CLAIMS

I claim:

1. An isolated polypeptide, comprising amino acid residues 81 to 131 of SEQ ID NO:2.
2. The isolated polypeptide of claim 1, comprising amino acid residues 88 to 131 of SEQ ID NO:2.
3. The isolated polypeptide of claim 1, comprising amino acid residues 36 to 132 of SEQ ID NO:2
4. The isolated polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:2.
5. An isolated nucleic acid molecule, wherein the nucleic acid molecule encodes a polypeptide comprising amino acid residues 81 to 131 of SEQ ID NO:2.
6. The isolated nucleic acid molecule of claim 5, wherein the nucleic acid molecule encodes a polypeptide comprising amino acid residues 88 to 131 of SEQ ID NO:2.
7. The isolated nucleic acid molecule of claim 5, wherein the nucleic acid molecule encodes a polypeptide comprising amino acid residues 36 to 132 of SEQ ID NO:2.
8. The isolated nucleic acid molecule of claim 7, wherein the nucleic acid molecule comprises nucleotides 106 to 396 of SEQ ID NO:1.
9. The isolated nucleic acid molecule of claim 5, wherein the nucleic acid molecule encodes a polypeptide comprising amino acid residues 1 to 132 of SEQ ID NO:2.
10. The isolated nucleic acid molecule of claim 9, wherein the nucleic acid molecule consists of nucleotides 1 to 396 of SEQ ID NO:1.
11. A vector, comprising the isolated nucleic acid molecule of claim 7.

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12. An expression vector, comprising a nucleic acid molecule that encodes amino acid residues 36 to 132 of SEQ ID NO:2, a transcription promoter, and a transcription terminator, wherein the promoter is operably linked with the nucleic acid molecule, and wherein the nucleic acid molecule is operably linked with the transcription terminator.

13. A recombinant host cell comprising the expression vector of claim 12, wherein the host cell is selected from the group consisting of bacterium, yeast cell, fungal cell, insect cell, avian cell, mammalian cell, and plant cell.

14. A method of using the expression vector of claim 12 to produce a polypeptide that comprises amino acid residues 36 to 132 of SEQ ID NO:2, comprising culturing recombinant host cells that comprise the expression vector and that produce the polypeptide.

15. The method of claim 14, further comprising isolating the polypeptide from the cultured recombinant host cells.

16. An antibody or antibody fragment that specifically binds with a polypeptide that has an amino acid sequence consisting of the amino acid sequence of SEQ ID NO:2.

17. An anti-idiotypic antibody that specifically binds with the antibody or antibody fragment of claim 16.

18. A method of detecting in a biological sample the presence of a nucleic acid molecule that encodes the amino acid sequence of SEQ ID NO:2, comprising:

(a) contacting a nucleic acid probe under hybridizing conditions with either (i) test RNA molecules isolated from the biological sample, or (ii) nucleic acid molecules synthesized from the isolated RNA molecules, wherein the probe consists of a nucleotide sequence comprising a portion of the nucleotide sequence of the nucleic acid molecule of claim 10, or a complement thereof, and

(b) detecting the formation of hybrids of the nucleic acid probe and either the test RNA molecules or the synthesized nucleic acid molecules,

wherein the presence of the hybrids indicates the presence of a nucleic acid molecule that encodes the amino acid sequence of SEQ ID NO:2 in the biological sample.

19. A method of detecting in a biological sample the presence of a polypeptide consisting of the amino acid sequence of SEQ ID NO:2, comprising

(a) contacting the biological sample with an antibody, or an antibody fragment, of claim 16, wherein the contacting is performed under conditions that allow the binding of the antibody or antibody fragment to the biological sample, and

(b) detecting any of the bound antibody or bound antibody fragment.

20. A composition, comprising a carrier and a polypeptide, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of: the amino acid sequence of SEQ ID NO:2, amino acid residues 36 to 132 of SEQ ID NO:2, amino acid residues 81 to 131 of SEQ ID NO:2, and amino acid residues 88 to 131 of SEQ ID NO:2.

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